

Remarks

Claims 1-18 are pending, with claims 1 and 10 being in independent form. By the present amendment, claims 1, 3, and 10 have been amended and claims 19-23 have been added without adding new matter.

Claim 3 has been amended merely to address informalities raised in the Action under the rules of the Office. Thus, this amendment was made for reasons unrelated to the statutory requirements for a patent and has not narrowed the scope of the claims. Accordingly, the amendment of claim 3 does not raise any presumptions regarding, nor trigger the application of the doctrine of prosecution history estoppel to limit the range of equivalents.

The drawings have been objected to for various informalities. Applicants have amended the specification and drawings where considered appropriate to address the Examiner's concerns.

Claims 1-5, 9-14, and 18 stand rejected for anticipation by U.S. Patent No. 5,790,589 to Hutchison IV, et al. ("Hutchison"). Claims 6-8 and 15-17 stand rejected for obviousness over Hutchison in view of U.S. Patent No. 6,453,181 to Challa et al. ("Challa").

Applicants describe a method and apparatus for detecting locations of path rays in a multi-path channel receiver having multiple time references, e.g., when the receiver switches time references. Locations of received path rays are searched for and determined. At least one of the multiple time references are adjusted according to the determined location of the received path rays.

The searching may include determining a probable location of a most significant path ray, shifting the location within a predetermined interval, analyzing each shifted location to determine whether the shifted location corresponds to the actual location of the received path ray, and depending on the analysis results, completing the search or determining a probable location of a next most significant ray. The analysis may be performed by correlating each shifted location with a pilot sequence and determining if the correlation results exceed a predetermined threshold. If the correlation results do not exceed the threshold, a determination is made whether all the most significant path rays have been analyzed, and if so, a complete search for the path ray location is initiated. When switching from a time

reference of low accuracy to a time reference of high accuracy, the low accuracy time reference may be calibrated to the high accuracy time reference based on averaged measurements of the ratio of clock cycles of the time reference of high accuracy to the clock cycles of the time reference of low accuracy.

To support a rejection under 35 U.S.C. § 102, each and every feature of the claimed invention must be shown in a single prior art document. Moreover, to establish a prima facie case of obviousness, the cited documents must teach or suggest all of the claim limitations. As discussed below, pending claims 1-18 positively recite limitations that are neither disclosed, nor suggested in the cited documents and are therefore not anticipated by, nor obvious in view of the cited document(s).

The invention defined by amended claim 1 includes "adjusting at least one of the multiple time references according to the determined location of the received path rays." This feature is not disclosed or suggested in Hutchison. In contrast, Hutchison relates to path-searching and is not concerned with multiple time references. Hutchison merely describes a conventional path-searcher and associated rake-receiver in the cited passage. Hutchison therefore could never realize the low power consumption benefits of employing a less accurate time reference during sleep mode.

The apparatus of independent claim 10 includes "at least two time reference generators, wherein at least one of the at least two time reference generators are adjusted according to a location of the path rays." This feature is not disclosed or suggested in Hutchison for at least the same reasons.

In Challa, a low-frequency clock is used during sleep mode, but not in connection with locating path rays. The combination of Hutchison and Challa does not disclose or suggest adjusting a time reference according to a location of received path rays.

According to Applicants' methods, when a location of a path is determined, the clock is adjusted. Since all other paths have substantially the same relative location in relation to the determined location of the searched path as they had before, the path pattern is unchanged when the clock is adjusted. Accordingly, all

paths are located while avoiding a complete search (due to the differences between the clocks).

Accordingly, since the cited documents fail to disclose or suggest all of the claim limitations for at least the above reasons, both the anticipation and the obviousness rejections of the claims should be withdrawn.

Moreover, if one had attempted to combine the disclosures of Hutchison and Challa, one would have been more likely to arrive at something that did not work at all or not in the manner claimed by the present application. As discussed above, one of ordinary skill in the art would have known that the features of Hutchison and Challa cannot be combined without further modification to reach the subject matter defined by claims 1-18. The combination of Hutchison and Challa does not disclose or suggest adjusting a time reference according to a location of received path rays. In the absence of any suggestion in the cited documents of how to make such a combination operable, one would have faced a serious engineering problem that naturally would have had a low probability of success without substantial experimentation and effort, especially in view of the need to modify the teachings of the documents. It is well settled that "[t]he mere fact that the prior art may be modified in the manner suggested by the Examiner does not make that modification obvious unless the prior art suggested the desirability of the modification." In re Fritch, 23 U.S.P.Q.2d 1780, 1783-84 (Fed. Cir. 1992).


Accordingly, Applicant asserts that the combination of documents relied upon to support the obviousness rejection of the claims is improper, and respectfully requests the claim rejection be reconsidered and withdrawn for this reason also.

New dependent claims 19-23 are patentable for at least the same reasons.

For the foregoing reasons, Applicants consider the application to be in condition for allowance and respectfully request notice thereof at an early date. The Examiner is encouraged to telephone the undersigned at the below-listed number if, in the Examiner's opinion, such a call would aid in the examination of this application.

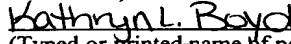

Respectfully submitted,

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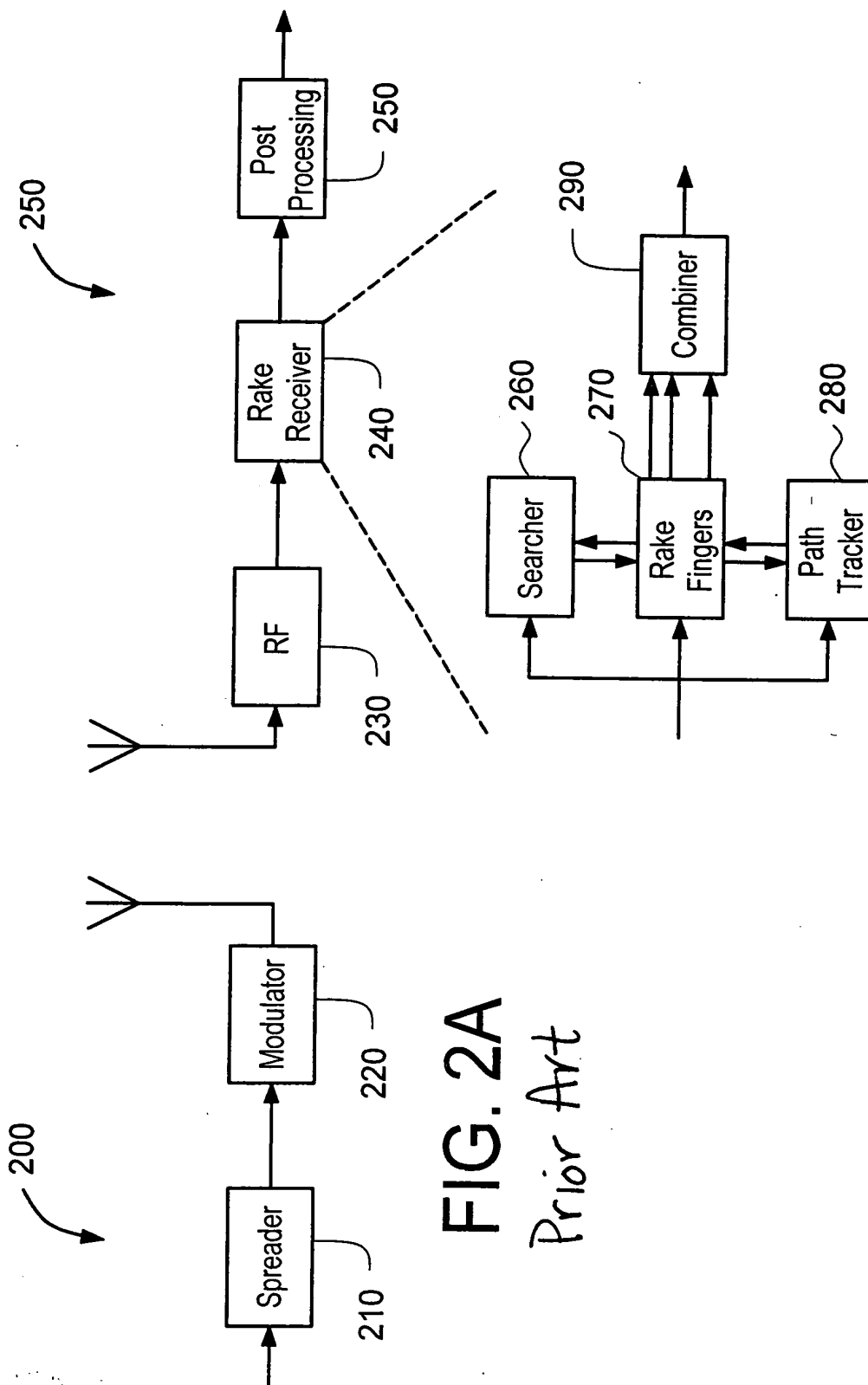


FIG. 2A
Prior Art

FIG. 2B